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Disseminating evidence-based treatments for PTSD in organizational settings: A high priority focus area

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A B S T R A C T

Dissemination of evidence-based treatments for PTSD has become an important focus of activity in the aftermath of recent terrorist attacks (e.g., London underground and U.S. 9/11 attacks), natural disasters (e.g., Indian Ocean tsunami and Hurricane Katrina), and wars (e.g., in Iraq and Afghanistan). This has become a high priority need for all mental health training and service delivery organizations. Researchers and educators have begun to examine clinician and client perceptions and preferences regarding PTSD treatment processes, and health care systems are organizing more comprehensive efforts at training and system change. As this evolution of services moves forward, effective dissemination should be a major focus of health policy research for the next decade or more.

This review critically evaluates the PTSD-related research and emerging theory related to four major sets of variables that affect dissemination: (1) Practitioner factors, (2) Training methods, (3) The practice innovation(s) being disseminated; and (4) Organization or system factors. We evaluate findings from recent studies in light of emerging models of dissemination, and in the final section of the paper, we consider five broad topics with particular implications for dissemination of PTSD-specific treatments. They are: (1) The content of dissemination (i.e., which treatment protocols or intervention methods should be prioritized); (2) Strict adherence versus flexibility in the use of treatment manuals and the role of fidelity assessment; (3) The need for collaboration with user audiences; (4) The potential role of web-based technologies in increasing the effectiveness and efficiency of dissemination; and (5) Development of dissemination infrastructures within organizations.

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Introduction

The task of providing adequate training in evidence-based interventions to providers of treatment services for trauma survivors is one of the foremost challenges in mental health service delivery today. With increasing recognition of the impact of traumatic stress exposure and its emotional and behavioral sequelae, and with increasing availability of safe and effective cognitive-behavioral treatments for posttraumatic stress disorder (PTSD; Friedman, Keane, & Resick, 2007; Follette & Ruzek, 2006), the demand for empirically-supported treatment services in this area is growing rapidly.

Although evidence-based practice guidelines have been published and made widely available, application of empirically-based treatments remains sparse and inconsistent, and best practices in the management of PTSD have not yet been widely disseminated or implemented (Rosen et al., 2004). Moreover, limited attention is being given at present to systematic, long-term evaluation of training programs and dissemination initiatives. Development of effective, replicable procedures to speed the adoption and enable sustained implementation of best practices in the treatment of PTSD and other trauma-related problems is an important public health priority. In his review of current mental health initiatives and priorities, Insel (2009) observes that despite better effectiveness outcomes for psychosocial interventions compared to drug therapy for chronic anxiety and mood disorders, "psychosocial interventions have received much less marketing attention than pharmacological treatments" (Insel, 2009; p. 129). This imbalance urgently needs to be addressed.

This review focuses on dissemination in organizational settings, for several reasons. Dissemination of evidence-based PTSD care is a current focus of several key organizations, such as the Veterans Healthcare Administration (VHA; Karlin, Ruzek, & Chard, 2009) in the United States and the National Health Service (NHS) in the United Kingdom. There is a growing body of literature on the role of organizational factors in best practices dissemination, which will

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inform our presentation here. Perhaps most important, organizations can systematically address the variety of factors that are likely to affect the success of dissemination efforts.

PTSD-related dissemination research in organizational settings

Dissemination projects or interventions are typically derived, either explicitly or implicitly, from a conceptual model or theoretic approach (Durlak & DuPre, 2008; Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004; Wandersman et al., 2008). The range of variables that should be considered when undertaking dissemination includes staff selection, pre-service and in-service training, ongoing consultation and coaching, staff and program evaluation, facilitative administrative support, and systems interventions (Fixsen et al., 2005). In fact, most models of dissemination apply a multilevel, ecological perspective. Simply put, dissemination depends on multiple, interactive factors at different individual and organizational levels. In considering PTSD-related dissemination issues, we consider the potential influences of practitioner factors, training factors, innovation factors, and system factors on specific outcomes of training (see Table 1).

Practitioner factors

Conventional wisdom dictates that dissemination content and processes should be tailored to the target audience (e.g., policy makers, clinicians, consumers), although the impact of such tailoring on implementation outcomes has limited empirical support (Cheater et al., 2005). Key practitioner factors are related to appraisals (e.g., need for a given practice, benefits of the intervention, and practitioner self-efficacy) and skills competence, and practitioners can be categorized in terms of readiness to adopt a particular change in practice (e.g., to adopt best practices in the treatment of PTSD in children, Kaufman Best Practices Project, 2004). In the PTSD field, there has been little investigation of practitioner variables likely to affect dissemination efforts. Gray, Elhai, and Schmidt (2007) surveyed members of the International Society for Traumatic Stress Studies and other trauma professionals to examine attitudes towards evidence-based practice (EBP) and to identify barriers to learning about EBPs. While individuals with cognitive-behavioral theoretical orientations reported more favorable attitudes toward EBPs than those endorsing psychodynamic, eclectic, or other orientations, most participants regardless of orientation were positive about EBPs. However, 15–20% of respondents held negative opinions about the overall EBP movement. Interestingly, barriers to learning about EBPs were related not to theoretical or philosophical beliefs, but to issues of access to training and concerns about applying research findings with their specific client populations. Specific barriers included insufficient time to learn (38.7%), difficulty finding time to attend training seminars (37.7%), a perceived lack of generalizability of the literature to their client population (36.4%), expense of training seminars (35%), and inability to apply current research findings to patients with unique characteristics (29.3%). It should be noted that this study surveyed specialists in traumatic stress, and findings may not generalize to other clinician populations.

Training factors

Although passive dissemination of management guidelines or treatment manuals has little impact on clinical practices, more intensive training methods can effect behavior change in practitioners. Traditional training workshops often fail to change practices (Jensen-Doss, Cusack, & de Arellano, 2008), but workshop impact increases when they include demonstration of skills and opportunities for behavior rehearsal (Fixsen et al., 2005) and interactive participation via discussion, peer performance feedback, and group planning (Grol & Grimshaw, 2003). Workshops can improve perceptions of confidence (Bennett-Levy & Beedle, 2007) and clinician skills (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004). This impact improves when initial training is supplemented by coaching/supervision. Most skills are first learned in training, but are consolidated via consultation/coaching on the job which can help sustain newly learned practitioner performances that may be crude, fragile, or incomplete (Fixsen et al., 2005). Commonly, however, PTSD treatment workshops offered for community providers are unlikely to allow sufficient opportunity for participants to train to criterion or receive ongoing supervision.

Recent studies have shown the effectiveness of combination workshop training and ongoing supervision in training community service providers in empirically-supported treatments for PTSD. Prolonged exposure treatment (PE) has been disseminated to rape crisis counselors (Foa et al., 2005), Israeli mental health practitioners (Cahill, Foa, Hembree, Marshall, & Nacash, 2006), and VHA mental health providers (Schnurr et al., 2007). Foa et al. (2005) trained therapists working in a community clinic for rape survivors to deliver PE and PE combined with cognitive restructuring. These master's degree social work or counseling clinicians had no prior experience with CBT, but when trained (via 5-day workshop) and supervised on a regular basis, they achieved patient outcomes that matched or exceeded those obtained by CBT experts. Schnurr et al. (2007) compared two types of individually-administered treatment – PE and present-centered therapy (a supportive intervention) – for female military Veterans with PTSD in a randomized controlled trial. PE treatment was associated with greater reduction of PTSD symptoms, decreased likelihood of meeting PTSD diagnostic criteria, and greater total remission at post-treatment and follow-up. Neuner et al. (2008) trained lay counselors to successfully treat PTSD symptoms among Rwandan and Somalian refugees, using Narrative Exposure Therapy, an adaptation of exposure treatment. Cook, Walser, Kane, Ruzek, and Woody (2006) demonstrated the feasibility and effectiveness of disseminating the Seeking Safety intervention (Najavits, 2002) to frontline clinicians treating co-occurring PTSD and substance use disorders in the VHA, and efforts to bring best practices for management of PTSD into the primary care (Engel et al., 2008) and acute care (Katon, Zatzick, Bond, & Williams Jr., 2006) medical settings have also been described.

Delivery of evidence-based PTSD interventions has also been studied in the aftermath of terrorist attacks. Gillespie, Duffy, Hackmann, and Clark (2002) conducted an open trial of Cognitive Therapy for PTSD delivered between 1 and 34 months post-attack with survivors of the 1998 Omagh, Northern Ireland terrorist bombing. Patients who met criteria for PTSD received 2-78 sessions (mean = 8) of treatment. Therapists were NHS mental health providers with no previous experience in treating trauma. 78 patients demonstrated significant pre-post improvement on standardized measures of symptoms, with an effect size for improvement in PTSD symptoms of 2.47, a magnitude of change comparable to or larger than controlled trials of CBT for PTSD. This research resulted in the establishment of a clinic offering trauma-focused cognitive therapy to Northern Ireland citizens affected by terrorism and other civil conflict. In a randomized controlled trial, Duffy, Gillespie, and Clark (2007) found that, compared to a wait-list control group, individuals treated in the clinic showed significantly larger improvements in PTSD, depression, and functioning.

Following the September 11, 2001 terrorist attacks in New York City, several efforts to train mental health providers in evidence-based treatments were undertaken. Levitt, Malta, Martin, Davis,

Table 1
Factors determining outcomes of PTSD dissemination in organizational settings.

Author	Design	Participants	Results	Comment and implications
A. Practitioner factors				
Gray, Elhai & Schmidt, 2007	Internet survey of 461 trauma specialists about attitudes and barriers towards dissemination of evidence-based practices (EBP) in mental health.	461 trauma specialists were recruited from International Society of Traumatic Stress Studies, 69% were female and 58% psychologists.	Overwhelming majority (86.3%) support EBP practice generally, although significant barriers were identified by many: Lack of time (39%), high cost of training (35.0%), lack of applicability to individual patients (29.3%), and lack of agency support (14.6%).	Internet survey limited only to ISTSS members. Focus on attitudes without behavioral data to confirm or replicate results. Indicates perceived barriers and ranking of prevalence.
Becker, Zayfert and Anderson, 2004	Mail survey of rural and urban psychologists on attitudes and experience with imaginal exposure (IE) for trauma treatment. Additional sample of trauma specialists.	217 psychologists from Texas and New Hampshire, 29 trauma specialists completed the questionnaire.	69% of main sample had not received formal training in IE, and only 20% were very familiar with IE. Only 17% currently use IE to treat PTSD. 93% of specialist group had received formal training in IE; 66% of specialists currently use IE to treat PTSD. Barriers to acceptance identified.	Small sample size and selection factors need to be considered. Results indicate low acceptance rates among non-specialists for use of exposure therapy in treating PTSD. Has the acceptance rate increased in the past 5 years? Study should be replicated and results updated.
B. Training factors				
Foa et al., 2005	Randomized intervention study of PE with/without cognitive restructuring in female sexual trauma survivors. Level of experience/training of therapists evaluated as potential independent predictor of treatment outcome.	171 female assault survivors.	Main effect for treatment (PE) with no additional effect for CR treatment. Additionally, *no effect* was observed for level of experience or prior training of therapists.	PE treatment protocol is effective component; *even* in the hands of inexperienced therapists. Well-designed study showing strong treatment effects of type of intervention (PE) and minimal effect of experience level or prior training.
Cahill, Foa et al., 2006	Review of outcome studies of PE and ongoing dissemination activities.	Six controlled trials of PE in PTSD are reviewed, in addition to 5 ongoing implementation programs.	Controlled studies support the clinical effectiveness of PE despite non-evidence based clinical concerns regarding safety. Review of studies showing successful training of lay and local counselors across countries and highly variable local conditions.	Two major implications: (i) PE treatments are highly transportable, despite resistance among therapists; (ii) Transportable treatment which can be effectively disseminated and adapted to local conditions.
Cook et al., 2006	Small, pilot study of manualized CBT treatment use and acceptance for male and female veterans with PTSD and substance abuse disorders.	Twenty-five outpatient veterans with mixed PTSD/Substance Abuse disorders; frontline clinicians treating co-occurring substance abuse and PTSD in VHA setting.	Positive treatment effects on multiple measures were shown consistently over 25 group treatment sessions.	Small, uncontrolled pilot study. Limited internal validity. Clinicians can be trained effectively in application of complex, manualized CBT interventions in co-occurring disorders. Institutional barriers did not prevent effective uptake in this study.
Neuner et al., 2008	Randomized, controlled dissemination study of three groups (i) manualized narrative exposure therapy; (ii) flexible trauma counseling; and (iii) no treatment monitoring. Treatment was administered by trained lay counselors in 277 trauma survivors in Uganda, Africa.	277 refugee trauma survivors living in close proximity to the research base. All subjects had confirmed diagnosis of PTSD. Nine refugee counselors (lay therapists) received 6-week training prior to the study.	Both active treatments were statistically and clinically superior to the no treatment monitoring condition, but did not differ from each other. Effect sizes for major outcomes were comparable to other RCTs of CBT for PTSD.	Previous study showed even greater changes with experienced therapists (Neuner et al., 2004) in the same population. Important implication: exposure therapy is highly transportable and adaptable to local conditions.
Gillespie et al., 2002	Treatment effectiveness cohort study of 91 consecutive patients with terrorist bombing-related PTSD symptoms referred for short-term (average 8 sessions) of a CBT treatment. Training and supervision of NHS therapists with "modest prior training" in CBT for PTSD.	91 patients (64 female, 27 male) with diagnosed PTSD as a result of the Omagh bombing in northern Ireland. Five NHS mental health clinicians with no prior experience or treating trauma.	Reductions in PTSD symptoms comparable to or larger than treatment effects seen in RCTs. No difference in outcomes compared to more experienced therapists in other studies.	Limitation of no control group, although impact of treatment as strong as any previously observed. Level of training and prior trauma treatment experience do not appear to be significant factors in determining treatment outcomes in patients with bombing-related PTSD.
Levitt et al., 2007	Treatment effectiveness cohort study of a flexible, manualized CBT for PTSD symptoms in survivors of World Trade Center (WTC) terrorist attacks. Flexible CBT treatment for 12-25 sessions. Level of CBT training and experience among therapists ranged from none to extensive.	Ten community-based counselors, only 3 of whom had extensive CBT training. Fifty-nine patients with PTSD symptoms related to WTC attacks, 68% women.	Treatment effectiveness was demonstrated, with moderate to large effect sizes equivalent to previous RCTs. Level of training was not separately related to outcome.	Comparison of results to prior RCT supports effectiveness of treatment. Therapist inexperience and lack of prior training not a barrier to treatment effectiveness.

C. Innovation Factors				
Najavits, 2006	Questionnaire study of clinicians attending workshop on dual diagnosis and PTSD.	133 clinicians (99 females; 32 males) with substance abuse and/or mental health background attending workshop program on PTSD and co-occurring substance abuse.	Clinicians strongly preferred present-focused "trauma coping skills" compared to past-focused ("telling the trauma story") treatments along 7 domains of assessment. A need for abstinence also endorsed by majority. Female therapists were less likely to endorse use of exposure therapy in treating PTSD. Results showed greater endorsement for present- than past-focused treatments.	Small study of selected mental health sample. Attitudes may not correlate highly, in some cases, with practice behaviors and implementation, and no investigation of reasons for clinician preferences.
Becker, Darius & Schaumberg, 2007	Analog study of responses to anticipated treatment for PTSD in undergraduate psychology students. Simulated PTSD scenario; participants read scenario aloud and consider treatment choices and responses.	166 undergraduate students (62% female, 38% male) were selected for participation.	Exposure therapy was preferred by 50.6% of participants, followed by CBT (21.9%), other psychological therapy (15.6%) and last, medication (SSRI) treatment (8.8%).	Analog studies have uncertain external validity. However, results imply that exposure or CBT therapy (alone or in combination) likely to have greatest acceptance for patients.
Devilly & Huther, 2008	Australian analog study of undergraduate raters of written case descriptions of PTSD treatment in female survivor of sexual abuse. Ratings of preference for exposure therapy (ET) compared to cognitive processing therapy (CPT).	78 volunteers, 92% of whom were undergraduate students (40 female, 38 male) at Swinburne University.	Participants rated ET as consistently more distressing to undergo than CPT. However, overall endorsement ratings did not differ between the two treatments.	Small analog study of responses to written descriptions of treatment of PTSD symptoms following sexual abuse. Exposure therapy perceived as more distressing, although equally effective treatment overall. Treatment descriptions did not conform to standard manualized PE and CPT protocols. Specific client preparation should be considered with current CBT treatments for PTSD.
D. System factors				
Cohen & Mannarino, 2008	Review of current dissemination modalities and programs for trauma-focused cognitive behavioral therapy (TF-CBT) for children and adolescents. State and regional programs reviewed Five current models (CATS Project, Illinois State, Washington State, New York State, North Carolina and Central Mass. Communities of Care are reviewed.	Six, state-run trauma intervention programs as above.	Overall effectiveness of dissemination program is supported. Variety of strategies, including internet-based training, are proving effective.	More research needed to assess optimal strategies for disseminating and implementing EST for traumatized children. Need to explore novel strategies for dissemination.
Frueh et al., 2009	Review of strategies and initiatives to disseminate trauma-focused treatments for PTSD among adults with serious mental illness (SMI).	South Carolina Department of Mental Health Program.	Multidimensional strategies are needed for successful implementation of CBT training programs for treating PTSD symptoms in SMI populations.	Strong recommendations made for organizational supports and need for involvement of key stakeholders for effective dissemination of CBT for PTSD.
Frueh et al., 2002	Survey of all mental health services in South Carolina involved in providing treatment services to trauma victims in state facilities.	23 state mental health facilities, 17 outpatient and 6 inpatient facilities.	Less than half of all outpatient facilities assess for trauma history, and 33% of inpatient services provided specialized treatment services for trauma survivors.	Limited survey of state mental health facilities. Results were consistent however, in showing inadequate preparation and lack of prior dissemination of trauma-related diagnosis or treatment management. Need for follow up and replication.

and Cloitre (2007) trained community-based counselors to deliver the Skills Training in Affective and Interpersonal Regulation/ Narrative Trauma Processing intervention to survivors who were distressed as a result of the attacks and reported at least some symptoms of PTSD. Treatment consisted of a mean of 18 individual sessions targeting emotion management skills, interpersonal skills, and imaginal exposure. Seven providers (master's-level social workers and clinical psychologists) participated in a two-day workshop, followed by weekly group supervision. Results showed that the treatment was effective in reducing symptoms of PTSD and depression, reducing hostility, interpersonal sensitivity, and use of alcohol/drugs to cope, and improving overall social-occupational functioning. Effect sizes were comparable to those obtained in an earlier efficacy study with child abuse survivors with PTSD.

The 2005 terrorist bombing attack on the London transportation system led to implementation of a centralized public health program to screen and refer survivors for evidence-based treatments and to monitor outcomes using standardized instruments (Brewin et al., 2008). Treatments were trauma-focused cognitive-behavioral therapy and Eye Movement Desensitization and Reprocessing. Clinician trainees received ongoing supervision from experienced clinicians within their individual treatment centers. Preliminary outcome data on 82 individuals meeting criteria for PTSD diagnosis indicated significant reductions in PTSD symptoms, with a large effect size. The study demonstrated that a public health response to disaster could include use of validated screening measures, empirically-supported treatments, and outcomes monitoring using standardized measures.

The demonstrations of the capacity of evidence-based interventions for PTSD to effect behavior change in effectiveness trials do not establish that these interventions can be successfully implemented on larger scales. Cahill et al. (2006) have argued that dissemination models that have been found to be effective in the smaller-scale dissemination efforts are labor intensive, in that they require intensive training followed by ongoing supervision. The availability of experts to do the training and the extended supervision is a rate-limiting factor. In most of the extant studies, training and/or supervision has been provided by the very experts who developed the interventions of interest. Cahill et al. (2006) suggest an alternative training-the-trainer model designed to create a larger pool of experts who can participate in the initial training and ongoing supervision of therapists.

Innovation factors

Perceived attributes of assessment and treatment practices themselves are one determinant of adoption and sustained use. Provider and patient perceptions of some PTSD treatments have been the subject of a small amount of research. Intervention-specific barriers to dissemination of Prolonged Exposure (PE) have been reviewed in the literature and ways of addressing those obstacles (Cook, Schnurr, & Foa, 2004) and adapting the treatment for use with substance abusing patients (Coffey, Schumacher, Brimo, & Brady, 2005) and others perceived as poor candidates for the treatment (Becker & Zayfert, 2001) have been proposed. In an empirical study of civilian clinicians, Becker, Zayfert, and Anderson (2004) found that two major barriers to clinician use of exposure therapy in treatment of PTSD are lack of sufficient training, and concern about the safety of exposure therapy, despite the absence of evidence that more patients discontinue PE or that PE causes symptom worsening relative to other treatments (Riggs, Cahill, & Foa, 2006).

Najavits (2006) investigated clinician preferences regarding past- (telling the trauma story) versus present-focused (trauma coping skills) therapies for patients with concurrent PTSD and substance abuse problems, using a convenience sample of clinicians attending a workshop. While present-focused treatment was rated more positively than past-focused treatment, there was significant interest in past-focused care and respondents endorsed a need to receive training and supervision in each type.

Several studies have examined patient preferences related to PTSD treatment in analogue samples. Becker, Darius, and Schaumberg (2007) studied 160 individuals with varying degrees of trauma history. Participants imagined undergoing a trauma, developing PTSD, and seeking treatment, and then evaluated 7 different treatment options. They rated their most and least preferred treatments along with their personal reactions to, and the perceived credibility of, each treatment. In this study, most individuals chose exposure or another variant of cognitive-behavioral therapy as their most preferred therapy. Based on these findings, Becker et al. (2007) argued that patient acceptance may in fact be relatively high, and that therapist factors may largely account for the problem of under-utilization of empirically-supported CBT treatments for PTSD.

Devilly and Huther (2008) compared perceptions of an exposure-based treatment (PE plus stress inoculation training) and a version of Cognitive Processing Therapy (Resick & Schnicke, 1993) that excluded all exposure elements, using an analogue sample comprised primarily of university students. Students received a detailed description of the treatments and anticipated response of a patient reporting a history of sexual abuse by her father, and then estimated the degree of distress likely to be experienced by patients receiving the treatments, and likelihood of patients' endorsing the treatment to others. The exposure treatment was anticipated to result in a higher level of distress for patients, but endorsement ratings did not differ significantly and were greater when subjects were informed that outcomes of the treatment were positive.

Zoellner, Feeny, Cochran, and Pruitt (2003) provided female undergraduate psychology students with written descriptions of PE and pharmacological (i.e. sertraline) treatments for PTSD that included patient background information, details of the treatment procedures, and potential side effects. Subjects were informed that both interventions have been found to be effective in research and were required to choose between the treatments, provide reasons for their choices, and rank order the factors that influenced their choices. Results indicated that female participants overall did not consider medication to be a viable option for the treatment of chronic PTSD. Approximately 7% of women chose sertraline treatment, compared to 87% who selected PE.

Evidence-based treatments are actually comprised of a set of component procedures that may be characterized by component-specific barriers and facilitators. Amsel, Neria, Suh, and Marshall (2006) identified ten components of the PE protocol. Some were deemed common to most forms of psychotherapy (e.g., psychoeducation), others to cognitive-behavioral treatments in general (e.g., use of homework assignments), and others to PE in particular (e.g., imaginal exposure). These authors measured provider attitudes and self-efficacy for each component, with a discrepancy between a favorable rating and low self-efficacy being defined as an implementation gap. Training was more effective for some components than others in reducing the gap.

System factors

Fixsen et al. (2005), in an encyclopedic review, argued that while the best evidence supports the centrality of skills-based training and measurement of practitioner performance/fidelity, implementation success is also associated with longer-term multilevel approaches that accomplish behavior change at practitioner,

supervisory, and administrative support levels. Although there is increasing recognition of the need to create trauma-informed systems of care (e.g., Ko et al., 2008), there has been little empirical investigation to date of systems variables in the context of PTSD practices dissemination.

In the United States, the VHA and Department of Defense (DoD) have recently "gone to scale" and established PTSD screening in primary care settings nationally.. In terms of PTSD treatment, the VHA and DoD are implementing two primary evidence-based treatments for PTSD – Prolonged Exposure and Cognitive Processing Therapy – across their health care systems (Karlin et al., 2009). In Australia, a systematic approach to dissemination of the Australian Guidelines for the Treatment of Adults with Acute Stress Disorder and PTSD has been undertaken by the Australian Center for Posttraumatic Mental Health (Creamer, Lewis, O'Donnell, Forbes, & Couineau, 2008). This has involved a public launch of the guidelines (targeting key audiences such as government officials, experts, industry representatives), education and training activities for health practitioners and persons affected by trauma, development of condensed guideline materials for professionals, launching of a DVD training package in delivery of imaginal exposure treatment, conduct of two-day skills training workshops in trauma-focused interventions, and initiation of research into the barriers to implementation. Efforts have been made to involve professional associations and practitioners as champions, to involve end-users in all stages of the process, and to address systemic as well as individual barriers.

Following Berwick (2003), the Kaufman Best Practices Project (2004) assessed a comprehensive set of barriers to implementation of evidence-based treatments for child trauma survivors, including those operating at the levels of the environment/community (e.g., funding/reimbursement issues), the organization (e.g., limited access to training/supervision, high staff turnover), the microsystem (e.g., belief that one's population is "different"), and the individual clinician (e.g., misperceptions about "manualized treatment"). Cohen and Mannarino (2008) described several larger-scale efforts to disseminate Trauma-Focused Cognitive-Behavioral Therapy for children (TF-CBT; Cohen, Mannarino, & Deblinger, 2006). In one application of the learning collaborative approach, each of 12 sites selected 6–10 individuals who represented roles critical to effective dissemination: administrators, supervisors, clinicians, family members, and community partners. These individuals attended training in the intervention and then were deployed to apply it and bring back lessons learned in implementation to the larger group. This cycle was repeated several times so that ways of successfully using the treatment in real-world settings could be determined and rapidly shared. The authors reported that TF-CBT was delivered to 485 children during the 9-month collaborative process, and that 70 clinicians learned to use the treatment with high fidelity to the model.

Frueh, Grubaugh, Cusack, and Elhai (2009) described efforts to disseminate evidence-based practices for adults with PTSD and severe mental illness in public-sector mental health agencies. Needs assessments of providers have shown that clinicians in the state-funded system have little training in trauma-related assessment and treatment (Frueh et al., 2001). Attitudinal barriers to use of evidence-based methods among clinicians are substantial (Frueh, Cusack, Grugaugh, Sauvageot, & Wells, 2006) and evidence-based practices are seldom used (Frueh et al., 2002). Frueh et al. (2009) identified a range of barriers including limited resources and commitment, knowledge deficits and attitudinal/belief barriers, and limited accountability for practices at clinician, facility, and systems levels. To address this state of affairs, the authors initially targeted increasing recognition of PTSD via implementation of routine screening; in South Carolina, standardized administration of assessment of trauma history and screening for PTSD are taking place in 12 of 17 community mental health centers (Cusack, Wells, Grubaugh, Hiers, & Frueh, 2007).

Perhaps the most complete demonstration of an integrated dissemination effort in the trauma field to date was accomplished in the Child and Adolescent Trauma Treatments and Services (CATS) Project (CATS Consortium, 2007). This collaboration between nine community provider organizations, their academic partners, and the New York State Office of Mental Health was established to deliver two evidence-based CBT interventions to children and adolescents experiencing problems related to the 9/11 terrorist attacks. In addition to a three tier training in the treatments that included direct training workshops, telephone consultation, and on-site consultation, the initiative included implementation of evidence-based assessments; application of an empirically-supported treatment engagement protocol; ongoing focus groups with directors, clinicians, supervisors, and families to inform implementation; significant efforts to work with providers and adapt the interventions to the delivery settings; involvement of leaders of the collaborating organizations in a steering committee; development of an infrastructure to support information sharing and ongoing communication; and formal program evaluation with comparisons with treatment as usual. By the end of the project, 173 clinical staff, primarily social workers and master's-level psychologists, had been trained in one of the two interventions, 700 youth clients participated in the evaluation arm of the project, and 385 received CBT treatment (ranging from 1 to 36 sessions).

Critical issues in CBT dissemination

What to disseminate?

At the present time, evidence-based treatments for PTSD are usually manualized treatments that combine specific interventions or intervention components to produce client change. However, it is useful to distinguish between evidence-based programs and practices, in that the goal of dissemination should be to implement only those elements of a program that are necessary and sufficient for effective behavior change (Fixsen et al., 2005). Information is lacking on the critical determinants of change in current CBT treatments for PTSD, but significant efforts are being made to identify core practitioner competencies for delivery of cognitive-behavioral evidence-based treatments in other problem areas, such as anxiety disorders and depression. Roth and Pilling (2007) suggest that clarification of core competencies may facilitate training and supervision efforts by focusing these processes on key elements known to be associated with effective interventions. It is also likely that a broad focus on core competencies will make CBT dissemination more efficient and feasible, if these competencies can be reliably measured. In the aftermath of the New York City World Trade Center terrorist attacks of September 11, 2001, Marshall, Amsel, Neria, and Suh (2006) judged that dissemination of PE could not be rapidly achieved by providing PE training workshops plus ongoing supervision over an extended period of time. These authors elected instead to focus training of community mental health providers on core skills of the PE intervention (i.e., imaginal and in vivo exposure). Although feasibility and efficiency of this approach was demonstrated, it should be noted that no controlled outcome assessment was performed.

This issue of which clinician behaviors or competencies to target for change has not been adequately addressed to date in the literature, and is a central consideration in the design and evaluation of future dissemination efforts in PTSD. Among other factors, it has

important implications for training effectiveness and burden, fidelity monitoring, and practitioner adoption.

Adherence versus local modification of protocols

Monitoring of treatment implementation has been shown to predict treatment effect sizes obtained (Durlak & DuPre, 2008), and early monitoring of implementation together with therapist retraining have been shown to increase the fidelity of implementation (DuFrene, Noell, Gilbertson, & Duhon, 2005). But while monitoring of adherence to EBPs is associated with improved outcomes, innovations that can be modified by users to fit their circumstances are more easily disseminated. Greenhalgh et al. (2004) argued that the immediate challenge lies in the need for new EBP's to "be adapted to be perceived as more advantageous, more compatible with prevailing norms and values, less complex, more trialable, with more observable results, and with greater scope for local reinvention" (p. 617). Similarly, Berwick (2003) noted that while the developers or advocates of new mental health treatments typically value their complexity and comprehensiveness, innovations invariably evolve and change with widespread adoption, and local adaptation often involves a process of simplification. Thus, there is a conflict between the need for fidelity in treatment adherence and the potential benefits of intervention modifiability.

Rosenheck (2001b) noted that the monitoring process will increase in importance as EBPs become more widely implemented. Over time, the trend will be for local communities of practice to modify the interventions: "as clinical staff become skilled and experienced in delivering services, they increasingly have their own perspectives about ways to improve the program or modify it to suit local circumstances" and "may eventually generate treatment activities that modify, reconfigure, or even replace previously disseminated program elements" (p. 818). Development of such learning communities implies that much innovation occurs "bottom-up" and it may become increasingly difficult to distinguish this experience-based innovation from erosion of performance standards (Rosenheck, 2001a). Programs can be expected to modify evidence-based practices based on local experience and local imperatives, and monitoring efforts will need to find new ways of focusing on only those elements that are crucial to the outcome or effectiveness of the intervention.

Monitoring of adherence and implementation are likely to become increasingly costly for systems and onerous for clinicians, particularly if these monitoring efforts are not able to focus on key components of treatment. Monitoring of therapist adherence to protocol is challenging and costly, particularly since self-reported adherence is not adequate. Self-reports frequently differ from independent behavioral observations of implementation and the latter are more likely to be associated with improved treatment outcomes. Accordingly, effective adherence monitoring needs to include labor-intensive sampling of therapist behaviors in actual treatment interactions with clients (e.g., via videotape review).

Considering the importance of this issue to the future of dissemination research in PTSD and other areas of mental health, research is urgently needed on the processes by which evidence-based treatments are modified by practitioners, and how those modifications impact the effectiveness of treatment (e.g., Rohrbach, Grana, Sussman, & Valente, 2006). Amaya-Jackson and DeRose (2007) reported on the results of focus groups investigating how clinicians apply evidence-based practices to complex child trauma cases, suggesting that clinicians should "adhere when possible, adapt when necessary, assess along the way" (p. 388). Specific research is needed on new strategies for introducing flexibility of application, while maintaining the functionality of key intervention components. A recent example of this type of dissemination research can be found in work by Levitt and colleagues (Levitt et al., 2007). They noted that manuals tested in formal research trials are often perceived to limit therapists' ability to tailor treatments to the needs of individual patients. Instead, they tested a "flexible application" of their evidence-based PTSD protocol that focused not on strict adherence, but on application of broad CBT principles related to three key treatment components (emotion regulation skills, interpersonal skills, and exposure to traumatic memories). Flexible application included freedom to skip or repeat protocol sessions, titrate amount of therapeutic exposure, include non-protocol sessions, and end treatment early. Results suggested that a training agenda of strict adherence to an evidence-based protocol may not be necessary to achieve effective implementation. In this study, training and supervision instructions that encouraged flexibility appeared to result in the desired therapist responses and client outcomes, although the degree of intervention adaptation or modification in this project was relatively limited.

As treatment research in PTSD evolves, it is likely that additional evidence-based treatments will be developed and shown to be effective. Moreover, evidence-based interventions necessary to address the many PTSD-concurrent problems and common comorbidities will also be developed. In a world of many empirically-supported treatment protocols, multiple treatments will compete with one another for organizational and therapist preference. This trend provides further argument for dissemination of core principles and competencies, such as those found in Barlow's (Barlow, Allen, & Choate, 2004; see McHugh, Murray, & Barlow, 2009) unified treatment protocol.

Collaboration with user audiences

In most health organizations, major dissemination efforts are typically set in motion by senior leadership and implemented in a "top-down" fashion. A significant limitation associated with "top-down" dissemination programs is the potential for lack of involvement or "buy in" from treatment staff. Rosenheck (2001b) has noted that the processes by which central decisions are taken to implement new treatment practices frequently fail to include involvement of experienced clinicians. This failure may undermine the long-term effectiveness of the dissemination process in that health professionals who are expected to implement new treatment practices about which they have not been consulted may be predictably resistant to implementation (Rohrbach et al., 2006). This is especially relevant in the implementation of complex treatment protocols which are intended to replace existing, highly familiar clinical practices. Delivery of these treatments requires committed performances and extrinsic controls are likely to be ineffective in eliciting needed levels of commitment (Adler, Kwon, & Signer, 2005). Not surprisingly, evidence increasingly suggests that shared decision-making – encouraging local involvement and participation in program dissemination – in turn is associated with better and more sustained implementation (Durlak & DuPre, 2008).

Increasing dissemination efficiency: a new role for educational technology?

In addressing the resource limitations and inefficiency of current training modalities, interest is developing rapidly in the use of web-based technologies for achieving more rapid or efficient dissemination to larger target audiences of providers. To date, the most notable exemplar of this trend is an internet-delivered training program in TF-CBT (http://tfcbt.musc.edu/). This highly successful internet-based training teaches an evidence-based, manualized intervention for children and adolescents with PTSD symptoms related to sexual abuse or other traumatic events. The 10-hour

course is designed for mental health professionals holding a masters degree or above, or graduate students in a mental health field. It includes 10 modules (e.g., stress management, creating the trauma narrative) each of which includes a streaming video introduction, knowledge tests, instructions for implementation, multiple video demonstrations, suggested homework assignments, cultural considerations, and so on. In its first year of operation, TF-CBTWeb had over 9000 registered learners from more than 60 countries, and 39% completed the full course. Results indicated that on average, learners made significant knowledge gains in all 10 content modules, and reported high levels of satisfaction with the materials (National Crime Victims Research & Treatment Center, March 9, 2007).

A similar, on-line CBT training program is being developed by the authors for use by mental health clinicians treating Veterans with PTSD. This program focuses on development of core CBT skills in three major areas: motivation enhancement, goal setting, and behavioral task assignment. A randomized controlled design is being used for evaluation of changes in knowledge, attitudes and skills associated with this innovative web-based training approach, with or without an individual supervision component, compared to a training-as-usual control condition. VHA clinicians will be randomly assigned to one of the three training conditions and monitored systematically before and after training. If successful, these new web-based training programs could provide a highly cost-effective and efficient means for training large numbers of clinicians at various levels of knowledge and expertise.

Towards dissemination infrastructures: a long-term perspective

Mental health training programs have traditionally focused on immediate or short-term changes in practitioner attitudes or behaviors. In reality, health care organizations require a longer time perspective and must develop multi-faceted approaches to ensure continued uptake of evolving treatment practices that reflect the continued accumulation of research findings and a changing evidence base (cf., Ruzek, Friedman, & Murray, 2005). In commenting on this problem, Rosenheck (2001b) noted that little attention has traditionally been devoted to investigating how to maintain, modify, and revitalize training programs over time. To ensure ability to successfully disseminate an ongoing stream of innovations across time, it may be necessary for health care organizations to develop coordinated infrastructures to support long-term implementation and modification of ongoing treatment practices (Fixsen et al., 2005; Wandersman et al., 2008). Some research indicates that systematic training of trainers, coaches, fidelity evaluators, and administrators increases the likelihood of successful implementation in organizations over time (Fixsen & Blase, 1993), and that implementation initiatives are more likely to be sustained over time when such systematic support is offered in conjunction with specific training efforts (Fixsen, Blase, Timbers, & Wolf, 2001).

A key question is: who will be the "purveyors" of implementation (Fixsen et al., 2005). Currently, dissemination is perhaps most commonly undertaken by the researchers who develop an intervention. However, the set of skills and relationships necessary to disseminate a practice often differs from that needed to develop and establish its efficacy. Developers of interventions may have few incentives to test simple practices, to dismantle their protocols, or to "degrade" their interventions to push the boundary conditions of effectiveness. Most are unlikely to have the time to provide the training and supervision needed to go to scale.

Key components of an organizational dissemination infrastructure might include systems/procedures for identification of dissemination priorities; marketing practices; organization or site preparation; training and supervision; systems-level intervention; measurement of practitioner behaviors and monitoring of implementation and adherence; evaluation of dissemination effectiveness; and dialogue with system practitioners and patients. Currently, few of these elements have been established in most organizations. For example, measurement of practitioner assessment (Elhai, Gray, Kashdan, & Franklin, 2005) and treatment behaviors is not widely undertaken, despite its utility in identifying areas of discrepancy with clinical practice guidelines (Rosen et al., 2004), tracking changes in practice, and monitoring effectiveness of dissemination initiatives. Most organizations do not have dedicated teams of trainers; rather, training and supervision are collateral duties that must compete with direct service delivery for practitioner time. On the front end, Berwick (2003) observed that, in many organizations, there is no established mechanism for seeking out and identifying best practices or sound innovations (e.g., no systematic surveillance of research findings and scientific meetings).

Conclusion: the road forward in organizational implementation

There is an accelerating focus among organizations on dissemination of evidence-based PTSD assessment and treatment practices. The limitations of traditional training approaches are more widely recognized and training workshops are more frequently supplemented with post-training consultation/supervision. Researchers and educators are beginning to examine clinician and client perceptions and preferences regarding PTSD treatment processes, and health care systems are organizing more comprehensive efforts at system change. As this evolution of services moves forward, effective dissemination should be a major focus of health policy research for the next decade or more.

As the availability of manualized evidence-based treatments continues to grow, the need for training will also continue to develop and intensify. To justify the investment of time and resources, evidence for the efficacy of training will be needed. There is an urgent need for research using multiple methodologies, including case studies (e.g., Cook, Biyanova, & Coyne, in press) and controlled comparisons (Varra, Hayes, Roget, & Fisher, 2008), in the development of evidence-based training in CBTs for PTSD. We view this as the "next frontier" in dissemination research. Ideally, research will establish that training interventions can effect change in provider behavior, and that provider changes mediate changes in client outcomes. But effective dissemination, as described above, involves more than training. Dissemination practice and research requires attention to a wide range of factors that may influence the evolution of care, from the ways that patients are made aware of services and clinicians learn about treatment practices (cf., Cook, Weingardt, Jaszka, & Wiesner, 2008) to systems changes that can support the adoption of new behaviors. To provide empirically-supported treatments in a cost-effective manner is the ultimate goal of implementation efforts in this increasingly high priority area.

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References

Adler, P. S., Kwon, S. W., & Signer, J. M. K. (2005). *The "six west" problem: Professional and the intraorganizational diffusion of innovations, with particular reference to the case of hospitals (Working paper)*. Los Angeles, California: University of Southern California.

Amaya-Jackson, L., & DeRose, R. R. (2007). Treatment considerations for clinicians in applying evidence-based practice to complex presentations of child trauma. *Journal of Traumatic Stress, 20*, 379–390.

Amsel, L. V., Neria, Y., Suh, E. J., & Marshall, R. D. (2006). Mental health community response to 9/11: training therapists to practice evidence-based psychotherapy. In Y. Neria, R. Gross, R. D. Marshall, & E. S. Susser (Eds.), *9/11: Mental health in*

the wake of terrorist attacks (pp. 496–518). New York, NY, US: Cambridge University Press.
Barlow, D. H., Allen, L. B., & Choate, M. (2004). Toward a unified treatment for emotional disorders. *Behavior Therapy, 35*, 205–230.
Becker, C. B., Darius, E., & Schaumberg, K. (2007). An analog study of patient preferences for exposure versus alternative treatments for posttraumatic stress disorder. *Behaviour Research and Therapy, 45*, 2861–2873.
Becker, C. B., & Zayfert, C. (2001). Integrating DBT-based techniques and concepts to facilitate exposure treatment for PTSD. *Cognitive and Behavioral Practice, 8*, 107–122.
Becker, C. B., Zayfert, C., & Anderson, E. (2004). A survey of psychologists' attitudes towards and utilization of exposure therapy for PTSD. *Behaviour Research and Therapy, 42*, 277–292.
Bennett-Levy, J., & Beedle, A. (2007). The ups and downs of cognitive therapy training: what happens to trainees' perception of their competence during a cognitive therapy training course? *Behavioural and Cognitive Psychotherapy, 35*, 61–75.
Berwick, D. M. (2003). Disseminating innovations in health care. *Journal of the American Medical Association, 289*, 1969–1975.
Brewin, C. R., Scragg, P., Robertson, M., Thompson, M., d'Ardenne, P., & Ehlers, A. (2008). Promoting mental health following the London bombings: a screen and treat approach. *Journal of Traumatic Stress, 21*, 3–8.
Cahill, S. P., Foa, E. B., Hembree, E. A., Marshall, R. D., & Nacash, N. (2006). Dissemination of exposure therapy in the treatment of posttraumatic stress disorder. *Journal of Traumatic Stress, 19*, 597–610.
CATS Consortium. (2007). Implementing CBT for traumatized children and adolescents after September 11: lessons learned from the Child and Adolescent Trauma Treatments and Services (CATS) Project. *Journal of Clinical Child and Adolescent Psychology, 36*, 581–592.
Cheater, F., Baker, R., Gillies, C., Hearshaw, H., Flottorp, S., Robertson, N., et al. (2005). Tailored interventions to overcome identified barriers to change: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews*(3). doi:10.1002/14651858.CD005470. Art. No.: CD005470.
Coffey, S. F., Schumacher, J. A., Brimo, M. L., & Brady, K. T. (2005). Exposure therapy for substance abusers with PTSD: translating research to practice. *Behavior Modification, 29*, 10–38.
Cohen, J., & Mannarino, A. P. (2008). Disseminating and implementing trauma-focused CBT in community settings. *Trauma, Violence, and Abuse, 9*, 214–226.
Cohen, J. A., Mannarino, A. P., & Deblinger, E. (2006). *Treating trauma and traumatic grief in children and adolescents*. New York: Guilford.
Cook, J. M., Biyanova, T., & Coyne, J. C. Comparative case study of diffusion of EMDR into two clinical settings: empirically-supported treatment status is not enough. *Professional Psychology: Research and Practice*, in press.
Cook, J. M., Schnurr, P. P., & Foa, E. B. (2004). Bridging the gap between post-traumatic stress disorder research and clinical practice: the example of exposure therapy. *Psychotherapy Theory, Research Practice, Training, 41*, 374–387.
Cook, J. M., Walser, R. D., Kane, V., Ruzek, J. I., & Woody, G. (2006). Dissemination and feasibility of a cognitive-behavioral treatment for substance use disorders and posttraumatic stress disorder in the veterans administration. *Journal of Psychoactive Drugs, 38*, 89–92.
Cook, J. M., Weingardt, K. R., Jaszka, J., & Wiesner, M. (2008). A content analysis of advertisements for psychotherapy workshops: implications for disseminating empirically supported treatments. *Journal of Clinical Psychology, 64*, 296–307.
Creamer, M., Lewis, V., O'Donnell, M., Forbes, D., & Couineau, A. (2008). From evidence to practice: knowledge synthesis, dissemination and transfer for better PTSD treatment. Paper presented at Annual meeting of International Society for traumatic stress studies, Chicago, Illinois.
Cusack, K. J., Wells, C. B., Grubaugh, A. L., Hiers, T. G., & Frueh, B. C. (2007). An update on the South Carolina trauma initiative. *Psychiatric Services, 58*, 708–710.
Devilly, G. J., & Huther, A. (2008). Perceived distress and endorsement for cognitive- or exposure-based treatments following trauma. *Australian Psychologist, 43*, 7–14.
Duffy, M., Gillespie, K., & Clark, D. M. (2007). Post-traumatic stress disorder in the context of terrorism and other civil conflict in Northern Ireland: randomised controlled trial. *British Medical Journal*. doi:10.1136/bmj/39021.846852.BE. (published 11 May 2007).
DuFrene, B. A., Noell, G. H., Gilbertson, D. N., & Duhon, G. J. (2005). Monitoring implementation of reciprocal peer tutoring: identifying and intervening with students who do not maintain accurate implementation. *School Psychology Review, 34*, 74–86.
Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: a review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology, 41*, 327–350.
Elhai, J. D., Gray, M. J., Kashdan, T. B., & Franklin, C. L. (2005). Which instruments are most commonly used to assess traumatic event exposure and posttraumatic effects?: a survey of traumatic stress professionals. *Journal of Traumatic Stress, 18*, 541–545.
Engel, C. C., Oxman, T., Yarnamoto, C., Gould, D., Barry, S., Stewart, P., et al. (2008). RESPECT-Mil: feasibility of a systems-level collaborative care approach to depression and post-traumatic stress disorder in military primary care. *Military Medicine, 173*, 935–940.
Fixsen, D. L., & Blase, K. A. (1993). Creating new realities: program development and dissemination. *Journal of Applied Behavior Analysis, 26*, 597–616.
Fixsen, D. L., Blase, K. A., Timbers, G. D., & Wolf, M. M. (2001). In search of program implementation: 792 replications of the teaching-family model. In G. A. Bernfeld, D. P. Farrington, & A. W. Leschied (Eds.), *Offender rehabilitation in practice: Implementing and evaluating effective programs* (pp. 149–156). London: Wiley.
Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231).
Foa, E. B., Hembree, E. A., Cahill, S. P., Rauch, S. A., Riggs, D. S., Feeny, N. C., et al. (2005). Randomized trial of prolonged exposure for PTSD with and without cognitive restructuring: outcome at academic and community clinics. *Journal of Consulting and Clinical Psychology, 73*, 955–964.
Follette, V. M., & Ruzek, J. I. (2006). *Cognitive-behavioral therapies for trauma*. New York: Guilford Press.
Friedman, M. J., Keane, T. M., & Resick, P. A. (2007). *Handbook of PTSD: Science and practice*. New York: Guilford Press.
Frueh, B. C., Cousins, V. C., Hiers, T. G., Cavanaugh, S. D., Cusack, K. J., & Santos, A. B. (2002). The need for trauma assessment and related clinical services in a state public mental health system. *Community Mental Health Journal, 38*, 351–356.
Frueh, B. C., Cusack, K. J., Grugaugh, A. L., Sauvageot, J. A., & Wells, C. (2006). Clinician perspectives on cognitive-behavioral treatment for PTSD among public-sector consumers with severe mental illness. *Psychiatric Services, 57*, 1027–1031.
Frueh, B. C., Cusack, K. J., Hiers, T. G., Managan, S., Cousins, V. C., & Cavanaugh, S. D. (2001). Improving public mental health services for trauma victims in South Carolina. *Psychiatric Services, 52*, 812–814.
Frueh, B. C., Grubaugh, A. L., Cusack, K. J., & Elhai, J. D. (2009). Disseminating evidence-based practices for adults with PTSD and severe mental illness in public-sector mental health agencies. *Behavior Modification, 33*, 66–81.
Gillespie, K., Duffy, M., Hackmann, A., & Clark, D. M. (2002). Community based cognitive therapy in the treatment of post-traumatic stress disorder following the Omagh bomb. *Behaviour Research and Therapy, 40*, 345–357.
Gray, M. J., Elhai, J. D., & Schmidt, L. O. (2007). Trauma professionals' attitudes toward and utilization of evidence-based practices. *Behavior Modification, 31*, 732–748.
Greenhalgh, T., Robert, G., MacFarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: systematic review and recommendations. *The Milbank Quarterly, 82*, 581–629.
Grol, R., & Grimshaw, J. (2003). From best evidence to best practice: effective implementation of change in patients' care. *Lancet, 362*, 1225–1230.
Insel, T. R. (2009). Translating scientific opportunity into public health impact: A strategic plan for research on mental illness. *Archives of General Psychiatry, 66*, 128–133.
Jensen-Doss, A., Cusack, K. J., & de Arellano, M. A. (2008). Workshop-based training in trauma-focused CBT: an in-depth analysis of impact on provider practices. *Community Mental Health Journal, 44*, 227–244.
Karlin, B. E., Ruzek, J., & Chard, K. (2009). Realizing the promise of evidence-based psychotherapies in the veterans health administration. In C. Straus (Ed.), *Hidden battles on unseen fronts* (pp. 179–186). Philadelphia, PA: Casemate.
Katon, W. J., Zatzick, D., Bond, G., & Williams, J., Jr. (2006). Dissemination of evidence-based mental health interventions: importance to the trauma field. *Journal of Traumatic Stress, 19*, 611–623.
Kaufman Best Practices Project. (2004). Kaufman best practices project final report: closing the quality chasm in child abuse treatment; identifying and disseminating best practices. Available from. http://academicdepartments.musc.edu/ncvc/resources_prof/reports_prof.thm Retrieved 02.01.09.
Ko, S. J., Ford, J. D., Kassam-Adams, N., Berkowitz, S. J., Wilson, C., Wong, M., et al. (2008). Creating trauma-informed systems: child welfare, education, first responders, health care, juvenile justice. *Professional Psychology: Research and Practice, 39*, 396–404.
Levitt, J. T., Malta, L. S., Martin, A., Davis, L., & Cloitre, M. (2007). The flexible application of a manualized treatment for PTSD symptoms and functional impairment related to the 9/11 World Trade Center attack. *Behaviour Research and Therapy, 45*, 1419–1433.
Marshall, R. D., Amsel, L. V., Neria, Y., & Suh, E. J. (2006). Strategies for dissemination of evidence-based treatments: Training clinicians after large-scale disasters. In F. Norris, S. Galea, M. Friedman, & P. Watson (Eds.), *Research methods for studying mental health after disasters and terrorism* (pp. 226–239). New York: Guilford Press.
McHugh, R. K., Murray, H. W., & Barlow, D. H. (2009). Balancing fidelity and adaptation in the dissemination of empirically-supported treatments: The promise of transdiagnostic interventions. *Behaviour Resaerch and Therapy, 47*(11), 946–953.
Miller, W. R., Yahne, C. E., Moyers, T. B., Martinez, J., & Pirritano, M. (2004). A randomized controlled trial of methods to help clinicians learn motivational interviewing. *Journal of Consulting and Clinical Psychology, 72*, 1050–1062.
Najavits, L. M. (2002). *Seeking safety: A treatment manual for PTSD and substance abuse*. New York: Guilford Press.
Najavits, L. M. (2006). Present- versus past-focused therapy for posttraumatic stress disorder/substance abuse: a study of clinician preferences. *Brief Treatment and Crisis Intervention, 6*, 248–254.
National Crime Victims Research & Treatment Center. (2007). *TF-CBTWeb: First year report*. Charleston, SC: Author. Retrieved from. http://tfcbt.musc.edu/resources/pdfs/TF-CBTWeb%20First%20Year%20Report.pdf on 09.03.09.
Neuner, F., Onyut, P. L., Ertl, V., Odenwald, M., Schauer, E., & Elbert, T. (2008). Treatment of posttraumatic stress disorder by trained lay counselors in an African refugee settlement: a randomized controlled trial. *Journal of Consulting and Clinical Psychology, 76*, 686–694.
Resick, P. A., & Schnicke, M. K. (1993). *Cognitive processing therapy for rape victims: A treatment manual*. Newbury Park, California: Sage Publications.
Riggs, D. S., Cahill, S. P., & Foa, E. B. (2006). Prolonged exposure treatment of posttraumatic stress disorder. In V. M. Follette, & J. I. Ruzek (Eds.), *Cognitive-*

behavioral therapies for trauma (2nd ed.). (pp. 65–95) New York, NY, US: Guilford Press.

Rohrbach, L. A., Grana, R., Sussman, S., & Valente, T. W. (2006). Type II translation: transporting prevention interventions from research to real-world settings. *Evaluation and the Health Professions, 29*, 302–333.

Rosen, C. S., Chow, H. C., Finney, J. F., Greenbaum, M. A., Moos, R. H., Sheikh, J. I., et al. (2004). VA practice patterns and practice guidelines for treating posttraumatic stress disorder. *Journal of Traumatic Stress, 17*, 213–222.

Rosenheck, R. A. (2001a). Organizational process: a missing link between research and practice. *Psychiatric Services, 52*, 1607–1612.

Rosenheck, R. A. (2001b). Stages in the implementation of innovative clinical programs in complex organizations. *Journal of Nervous and Mental Disease, 189*, 812–821.

Roth, A. D. & Pilling, S. (2007). The competences required to deliver effective cognitive and behavioural therapy for people with depression and with anxiety disorders. www.ucl.ac.uk/CORE

Ruzek, J. I., Friedman, M. J., & Murray, S. (2005). Towards a PTSD knowledge management system in veterans health care. *Psychiatric Annals, 35*, 911–920.

Schnurr, P. P., Friedman, M. J., Engel, C. C., Foa, E. B., Shea, M. T., Chow, B. K., et al. (2007). Cognitive behavioral therapy for posttraumatic stress disorder in women. *Journal of the American Medical Association, 297*, 820–830.

Varra, A. A., Hayes, S. C., Roget, N., & Fisher, G. (2008). A randomized controlled trial examining the effect of acceptance and commitment training on clinician willingness to use evidence-based pharmacotherapy. *Journal of Consulting and Clinical Psychology, 76*, 449–458.

Wandersman, A., Duffy, J., Flaspohler, P., Noonan, R., Lubell, K., Stillman, L., et al. (2008). Bridging the gap between prevention research and practice: the interactive systems framework for dissemination and implementation. *American Journal of Community Psychology, 41*, 171–181.

Zoellner, L. A., Feeny, N. C., Cochran, B., & Pruitt, L. (2003). Treatment choice for PTSD. *Behaviour Research and Therapy, 41*, 879–886.